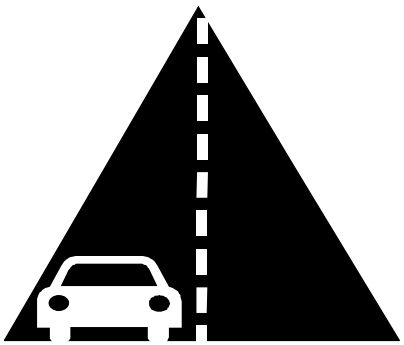
Step 2—Research Existing Conditions of the Transportation System



Key Activities

- *Research and analyze the performance of all elements of the existing and programmed transportation system that serves the corridor*
- *Research the role of transportation in the corridor*
- *Develop base maps*
- *Compile a written report of gathered information*

Purpose (Why)

The purpose of Step 2 is to gather enough information to provide a complete picture of the existing transportation system within the corridor. This information will be supplemented with information regarding land uses and environmental conditions in the corridor area in Step 3. It forms the factual basis for analysis (in Step 4) of how the existing transportation system can be expected to perform in future (20-year) conditions.

The base maps will be used throughout the corridor planning process as work maps and displays in meetings and at public participation events.

Activity (What) and Approach (How)

Step 2 is an information gathering process. Professional judgment and general knowledge of the corridor area should be used to determine what information sources, and how much data, are necessary to provide a complete picture of the existing transportation system within the corridor.

Task One: Research and Analyze the Existing System

Research all elements of the transportation system within the corridor to get a complete picture of the existing system. The level of detail of the information gathered should correspond with the importance of that element to the transportation system.

Begin by reviewing the *Idaho Transportation Plan*, the *Idaho State Highway Plan*, and other modal plans. Also review *ITD Rules*, and *ITD Board and Administrative Policies* for existing requirements relevant to the corridor. Review the current Statewide Transportation Improvement Program for any improvements that are already programmed.

The scope of the search should be limited to information that builds a complete picture of the transportation system in the corridor. Gathering too much detailed data, or data peripheral to the function of the corridor, may detract from the complete picture. Existing data should be used when adequate to provide an accurate picture of the transportation system. See Exhibit 2-1 on page 17-19 for an overview of data sources from ITD, Division of Transportation Planning.

Data Sources at the Idaho Transportation Department

The following is an overview of sections within the Division of Transportation Planning, and the types of information they can provide for the corridor planning effort.

PLANNING SERVICES SECTION

Contact: Planning Services Manager 208/334-8211

Available Data: Through the Highway Performance Monitoring System for Roadway Geometrics and Roadway Inventory, the following State Highway System needs data can be obtained:

- Terrain
- Surface width
- Shoulder type
- Cost of improvements
- Last year pavement improvement
- Asphalt pavement structural number
- Pavement cracking index/roughness index/final index
- Railroad crossings
- Surface type
- Median width
- Access control
- Parking
- Concrete pavement depth
- Bridge structures
- Number of lanes
- Shoulder width
- Volume/capacity ratio
- Percent trucks
- Identified deficiencies and improvements

Also available are the following detailed corridor needs studies:

- Highway Needs Report, 1997-2007, US-95 Corridor
- Highway Needs Report, 1997-2007, I-84/I-86/US-30 Corridor

TRAFFIC SURVEY & ANALYSIS SECTION

Contact: Traffic Survey and Analysis Manager 208/334-8217

Available Data:

Traffic volumes

- Hourly intervals volumes
- Annual average daily traffic (AADT) volumes
- Forecast AADT for design year
- Fifteen minute intervals volumes
- Daily 24 hours summarized

Vehicle classification

- Individual vehicles with date, time, lane, speed, and axle spacings (portable only at this time)
- Hourly volumes
- Commercial annual average daily traffic (CAADT)
- Date, time, speed, and magnetic length (permanent sites)
- Daily 24 hours summarized by vehicle length or type
- Forecast CAADT for design year

Exhibit 2-1 (continued)

Truck weight data

- 13 continuous weigh-in-motion sites
- 18 Kip equivalent single axle loadings (ESALS)
- Forecasted ESALS for design year
- Over-weight reports
- Weigh-in-motion data throughout the state (48- to 72-hour periods)

Design hourly volumes

- 30th, 50th, 100th and 200th highest hourly volumes at permanent sites
- Percent commercial during the 30th highest or DHV
- Forecasted volume for the design year

Speed data

- Hourly speed volumes
- Percent exceeding 55, 60, 65, 70, 75, and 85 mph
- 85th percentile speeds
- Speed pace report

Vehicle turning movements

- Collected in 15 minute intervals
- Collection period usually covering the peak hours, or the ASTM standard which is 7:00 a.m.-10:00 a.m. and 3:00 p.m.-6:00 p.m. and sometimes 11:00 p.m.-1:00 a.m.
- Gap studies—determine the number of gaps between vehicles in terms of seconds between vehicles

The ROSE2 Traffic volume file

- AADT, Passenger car, Pickup, CAADT
- Traffic flow maps
- Identified by segment code and milepost
- 20-year forecast based on past 20 years

Vehicle miles of travel
Special reports as requested

GEOGRAPHIC INFORMATION SYSTEMS SECTION

Contact: Geographic Information Systems Manager 208/334-8222

Available Data: Through the Milepost and Coded Segment (MACS) system database, information about the following can be obtained (MACS is ITD's official source of information about the State Highway System—reference Administrative Policy A-09-12):

- Segment codes
- Functional class
- Mile points
- Mileage
- Rural/urban designation
- City/urban limits
- County limit
- District boundaries
- Jurisdiction boundaries
- City population
- Designated roadways

Exhibit 2-1 (continued)

Available data: Through the mapping and geographic information system database, the following can be obtained:

- State Highway System maps for cities, counties, highway districts, and ITD districts
- Functional-classification maps for urban areas (5,000+ population), and rural functional classification maps for counties, highway districts, and ITD districts
- Federal-aid system maps for counties, highway districts, and ITD districts
- 100K (1 inch = 1 mile) topography maps
- An index of available publications

INTERMODAL PLANNING SECTION

Contact: Intermodal Planning Manager 208/334-8209

Available data/information:

- Scenic byways
- Scenic byway application process
- Functional classification update and review process
- Intermodal facilities information
- Pedestrian and bicycle planning
- Rail planning
- Strategic planning
- Long-range planning
- Access control
- Official Idaho Transportation Board minutes (query minutes by route description)
- Road-closure maintenance agreements

If existing data is inadequate, determine what additional data would be most beneficial to this specific corridor planning effort. Explore whether another transportation or planning agency is willing to share the cost of updating or acquiring new data.

Transportation system elements within the corridor will likely include one or more of the systems described below.

Highways and Streets. Public/private streets and state/local streets and highways within the corridor should be included in the information search. Research locations, right-of-way widths, number of lanes, adopted functional classifications, crash rates and concentrations, road conditions, origin/destination data, freight data, key freight users, peak travel times, access management, and system management or demand management policies or tools in effect.

At a minimum, the average annual daily traffic (AADT) should be identified for every logical link within the corridor. A link is a segment of the corridor between major crossroads where traffic volumes are likely to change. (A link may be many miles long in a rural corridor or only a few blocks in an urban area.) AADT's should also be identified for the highways and streets which cross the corridor and form the limits of each link. AADT information, along with information on the size of the facility, should then be used to determine the level of service.

AADT should be available from the ITD statewide counting program. Additional counts may be necessary on crossroads, or to fill in gaps in the state counts.

Highway and street information may be obtained from the *Idaho State Highway Plan*, the local Metropolitan Planning Organization (MPO), the public entity with jurisdiction over highways and streets, the ITD Division of Transportation Planning, the Office of Highway Safety, ITD District offices, and the County Assessor (for private streets).

Types of information needed for the corridor plan include: functional classification maps; construction plans; pavement conditions; records of existing traffic control devices; access control policies; crash data; results of any origin/destination surveys; data on freight usage; seasonal and daily traffic volume peaks; and turning movement counts at major intersections.

Breakdowns of hourly directional volumes should be determined on a case-by-case basis, by the ITD District Planner and ITD Traffic Survey and Analysis section.

Urban areas or areas with known problems at intersections may require a detailed analysis of the intersections. Peak period turning movement counts should be completed for such intersections.

If the corridor has competing streets or highways, conducting up-to-date origin/ destination surveys or studies may be helpful to assess the role of each street or highway in the system.

Evaluations should also be conducted of how well the geometric features of the highway or street comply with current standards, how well the highway or street provides for regional and intermodal connectivity, and safety issues and problems.

Evaluations can use a general rating of **good**, **fair**, or **poor** to describe performance that is not easily quantified.

For example, Level of Service D is understood as being more congested than Level of Service B; but, performance regarding intermodal connectivity has no universally accepted standard and could best be described as **good** or **poor**.

Railroads. Freight and passenger rail facilities within the corridor should be researched. The search should include locations, right-of-way widths, crossings (whether at-grade or separated), speed of rail travel, crossing signalization, safety records, schedules, and usage rates. Identify whether the existing geometric features of the railroad comply with existing standards. Identify the locations of key users.

Railroad information may be obtained from the *Idaho State Rail Plan*, ITD's rail coordinator, and railroad companies. Data needs include the locations and widths of rights-of-way, at-grade crossings, grade separations, signalization, number of trains, usage rates, safety records, and length and frequency of trains.

Airports. Research airport locations, number of commercial carriers, commercial enplanement statistics, and general aviation statistics.

Airport information is available from the *Idaho Aviation System Plan*, ITD's Division of Aeronautics, airport managers, and commercial carriers. Airport locations, commercial enplanement statistics, and general aviation statistics should be gathered for airports serving the corridor.

Transit Services. Public and private, fixed-route and non-fixed-route transit services should be researched. The search should include intracity and intercity bus services, vanpools, carpool programs, and special purpose vans (such as senior citizen and special needs carriers). The research should include station locations, routes and frequency (if fixed); safety records and ridership; and major concentrations of riders.

Transit service information is available from *Movin' Idaho* (*Idaho Public Transportation Plan), Idaho Statewide Public Transportation Needs and Benefits Study,* ITD's Public Transportation Division, and from transit service providers. Obtain data on the number of carriers, locations of stations, locations of park and ride lots, availability and number of special purpose vans, routes, frequency, and ridership.

Bicycle Facilities. Include research on the locations and widths of routes, paths, and lanes within the corridor.

Bicycle facility information may be available from the *Idaho Bicycle and Pedestrian Transportation Plan*, ITD's Bicycle/Pedestrian Coordinator, local MPOs, highway districts, or local government planners. Information should be obtained regarding route, path, and lane locations within the corridor and their connections to other transportation facilities.

Pedestrian Facilities. Include research about the locations of sidewalks, paths, trails, and locations of signalized and non-signalized crosswalks within the corridor.

Pedestrian facility information may be available from the *Idaho Bicycle and Pedestrian Transportation Plan*, highway districts, and local government planners. The locations of sidewalks, paths, crosswalks, and connections to other transportation facilities are needed.

Intermodal Connection Facilities and Stations. Include research on the locations and sizes of park-and-ride parking lots, railroad and port-related truck and container transfer stations (including major grain elevators), transit stations in close proximity to bicycle, pedestrian, or airport facilities, and other facilities and programs which encourage intermodal travel. Include usage rates and capacity.

Intermodal connection facility information may be available from the sources listed for each mode of transportation.

Utilities. Include research about the locations and sizes of utility facilities within the corridor.

Utility locations may be obtained from street or highway construction plans, from the public entity with jurisdiction over streets and highways, and from utility companies.

Some corridors will have transportation facilities other than those listed above. For data needs on other facilities and modes, see Appendix B.

Task Two: Research the Role of Transportation in the Corridor Area

Describe the characteristics of the corridor area in terms of the role transportation plays in the region. For example: Is it a Western Transportation Trade Network or NAFTA Corridor? Does tourism have a central role in the area's economy? Is there a need for quick farm to market trucking? Is it a heavy commuter route? Is it a key freight route?

The role of transportation within the corridor is not solely a "hard data" need. Local knowledge and professional observation of the existing system should be used, and supplemented with hard data when available.

Examples:

- If it appears from observation and from discussions with local officials that farm-to-market transportation is important, data should then be collected from local grain elevators, state weigh stations, and the county extension service regarding local farm production, shipping, and trucking.
- If the corridor is located in a tourism area, data regarding tourist destinations and number of visitors should be gathered. Sources include the Idaho Department of Commerce, local Chamber of Commerce, and resort managers.

Task Three: Develop Base Maps

Add the information you have gathered to base maps of the corridor, using available maps. Use those maps with the most useful information and a scale appropriate to the corridor. See Exhibit 2-2 on page 23 for more information on determining appropriate map scales.

Possible map sources include ITD GIS Section, city or county Engineers or Surveyors, city or county comprehensive plans, USGS, MPOs, highway districts, the Idaho Department of Water Resources, Councils of Government, or private sources.

Existing right-of-way widths and general locations of transportation facilities and their structural characteristics should be added to the base maps. Also add the locations of existing schools, hospitals, major outpatient treatment centers, and major employment centers or major tourist destinations within the corridor.

Interview major companies located within the corridor to determine their shipping and commuting activities. Add to the base maps any other existing or approved large or unusual traffic generators or attractors within the corridor or served by the transportation system of the corridor.

Task Four: Write a Report

Compile the information gathered in the three tasks listed above into a written report.

Expected Products (Results)

- Base maps that illustrate existing and committed transportation facilities serving the corridor.
- A written report that describes features, operational characteristics, and performance of the existing transportation system, and the role of the corridor in the region.

MAP SCALES

The scale of mapping used in the corridor plan can vary depending on the level of study detail and the level of detail desired to portray plan findings. A smaller scale might be selected for convenience for longer corridors, but this should be avoided whenever possible. Use an appropriate scale to properly portray information at the level of detailed intended. (Metric conversions for map measurements are also available.)

The following are suggested uses for various common scales:

- 1" = 1 mile or 1"50,000 for metric maps — Useful for displaying the general study corridor and surroundings, evaluation results over extended corridor areas, and general land use.
- 1" = 2,000 feet — A common scale for similar purposes above. Often preferred because USGS "quad" maps are available at this scale. This is the smallest scale at which alternative alignments might be considered, recognizing that even a pencil line may be wider than the actual roadway.
- 1" = 1,000 feet — The smallest scale to reliably begin determining actual impacts of various alignments. Where specific effects to properties are not intended to be illustrated, this may be the most detailed scale used.
- 1" = 400 feet — In rural areas this scale is adequate to plan for new corridors with good sensitivity to the amount of impact to individual buildings or parcels. Early right of way estimates are possible at this scale and the public can recognize probable relationships between their property and proposed improvements.
- 1" = 200 feet — The greatest level of detail considered for a corridor plan under most circumstances. Differences in existing and proposed roadway edges and right of way lines are clearly visible. This scale affords about the same level of reliability in urban areas (where space is more restricted as the 1" = 400 feet scale does in rural areas.

When selecting a scale, keep in mind that the scale at which something is shown carries a strong implication about the level of detail being considered in the plan. Using too detailed a scale for corridor planning can result in a lot of unwanted detailed questions and analysis. The least detailed scale that can be used which still allows the intended information to be effectively communicated is best. For most corridor plans, the 1" = 1,000 feet or more range is the usual choice. Also, it is common that the information developed at one scale for study and public presentation is then shown at one-half the size or smaller in the corridor plan document.

Step 2 Guidelines

The goal of Step 2 is to gain a complete picture of the existing transportation system within the corridor. Use the checklist to account for all necessary system components.

Task One: Research and Analyze the Existing System

Gather information about each of the transportation system components listed below: (*How much data? The level of detail should correspond to that component's importance in the area. Where's the data? See page 17 for a summary of data sources.)*

- ❑ Highways and streets (public, private, state, and local streets, and highways);
- ❑ Railroads (freight and passenger);
- ❑ Airports (freight and passenger);
- ❑ Transit services (public, private, general citizen, and special needs);
- ❑ Bicycle facilities (locations and routes);
- ❑ Pedestrian facilities (locations, signalized, and non-signalized);
- ❑ Intermodal connection facilities and stations (park-and-ride lots, railroad and port truck transfer stations, bicycle, pedestrian, and airport transfer facilities); and
- ❑ Utilities.

Task Two: Research the Role of Transportation in the Corridor Area

Define the role of the corridor by asking the following questions: (*Other questions will probably be needed — use professional and local judgment to look at all aspects.)*

- ❑ Is this a Western Transportation Trade Network, NAFTA Corridor, etc.?
- ❑ Does tourism have a central role in the area economy?
- ❑ Is there a need for quick farm-to-market trucking?
- ❑ Is this a heavy commuter route or a key freight route?

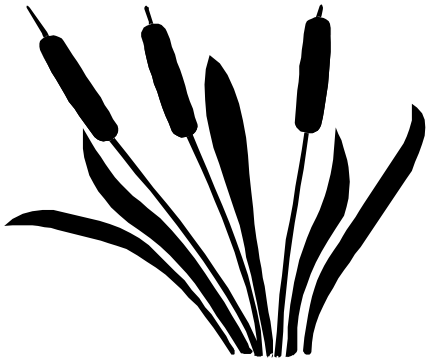
Task Three: Develop Base Maps

- ❑ Develop base maps for the corridor. *See page 23 for appropriate map scales.*

Task Four: Write a Report

- ❑ Compile the information gathered in this step into a written report. *This report will likely be used for informing the public; keep the audience in mind*

Step 3—Document Existing and Projected Environmental/Land-Use Conditions



Key Activities

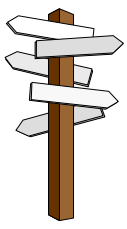
- *Research current and planned land uses, and the cultural, historical, and socio-economic characteristics of the corridor region*
- *Identify critical environmental factors*
- *Conduct environmental scan of corridor area by mapping environmental resources and identifying issues and preparing an environmental scan report*

Purpose (Why)

The purpose of Step 3 is to gather background information about the region served by the corridor, in terms of its current and planned land uses and historical, cultural, environmental, social, and economic features. This information will be used to identify issues that could impact corridor improvements, and with the information already gathered (in Step 2), form the basis for analysis (in Step 4) of how the existing transportation system is expected to perform in future (20-year) conditions.

After a preferred alternative is identified and the corridor plan is completed, the information gathered in this step can help with project-related National Environmental Policy Act (NEPA) clearance.

Activity (What) and Approach (How)



This step includes gathering information to provide a broad picture of existing and future land uses and the historical, cultural, environmental, and socio-economic conditions in the region.

Task One: Research Land Uses and Other Characteristics of the Region

Information about the characteristics of the region served by the corridor should be gathered using existing data and projections when available.

Census data and Idaho Department of Commerce population statistics should be used. Census data is located in local Federal repository libraries (check with local libraries and universities).

The Idaho Department of Commerce has population projections for each county. Local MPOs have population projections for the metropolitan areas they serve. Locally generated population estimates and projections may also be available from city or county planners or from utility companies. The data should be at the city or county level. In some cases, census tract, census block groups, or neighborhoods would be a useful breakdown.

Care should be taken to locate areas within and adjacent to the corridor that have higher than average concentrations of low income or minority populations.

NEPA promotes environmental justice and will scrutinize any disproportionate impacts created by any federally funded transportation improvements. Data on area ethnicity, race, income, and age distribution should be gathered from census reports and local sources.

Employment characteristics may be obtained from Census journey-to-work reports, studies of commuting patterns by highway districts or transit service providers, labor force data from the Idaho Department of Labor, and Census employment-by-industry statistics. Other sources include special reports by the Idaho Department of Labor, U.S. Bureau of Economic Analysis, and Regional Economic Information System. City or county-level analysis would be appropriate.

City and County Comprehensive Plan assumptions for land uses should be used when available. General land uses in the region served by the corridor should be gathered to determine the demand on the transportation system. And, general land uses within the corridor should be identified for determining the amount of possible displacements and noise and air quality concerns.

Land use data should include general zoning classifications found in the corridor planning area, existing and planned land use patterns, existing and planned major development, and vacant land inventory (if available).

Any major pipeline or large utility facility (natural gas and petroleum pipelines, electric substations, etc.) locations need to be identified. Utility companies serving the corridor area are the primary source for this information.

Human characteristics should be analyzed to understand potential impacts that may be caused by corridor improvements. Use aerial maps, conduct field and/or windshield surveys, and interview stakeholders to determine effects on neighborhoods and the community that may arise as a result of the corridor improvements. Describe the existing neighborhoods and business districts abutting the corridor. Note impacts that would lead to more noise, physically splitting up the community, decreasing aesthetics, and items that decrease the local residents' quality of life.

Incomplete or out-of-date information regarding land uses, population, and employment may be supplemented by tracking existing trends in rezones, building permits, utility extensions (numbers and locations), and the observations of Planning and Zoning Commission members, local planning staff, and elected officials.

Lists of historical buildings and sites and cultural resources should be available from city and county comprehensive plans and the Idaho Historic Preservation Office. Resources include listed or potentially eligible historic buildings or sites, historic districts, archaeological sites, cemeteries, and trails.

Task Two: Identify Critical Environmental Factors

Review and assess applicable state, local, and federal environmental laws, regulations, and policies. State and Federal information may be obtained from the ITD District Environmental Planner or headquarters Environmental Section, and local regulations can be found at city and county planning departments.

Any existing environmental studies or studies that include geotechnical data, hydrological information, soils, and subsurface geology should be reviewed.

Major geologic and general terrain features (for example, slopes, fault lines, outcroppings, soil types) should be available from USGS topographic maps, Natural Resource Conservation Service Soil Surveys, city or county comprehensive plans, or existing studies prepared for the area.

Contact agencies to help identify environmental resources in the corridor, and issues associated with those resources. (See list of agencies in Appendix E.)

Task Three: Conduct Environmental Scan of Corridor Area

Conduct an environmental scan and list of critical environmental issues within the corridor that include the following tasks:

- Map environmental resources and prepare a list of environmental issues. Include, at a minimum:
  - Floodways and 100-year flood plain boundaries
  - Wetland boundaries
  - Archaeological sites
  - Mines
  - Hazardous waste sites
  - Community or public wells
  - Historical buildings, sites, and districts
  - Rivers and lakes (identifying any designated wild and scenic rivers)
  - State and national forests
  - Wildlife reserves
  - Critical wildlife habitat
  - Threatened and endangered species (locations or likely presence)
  - Public parks
  - Prime agricultural land
  - Barrier effect
  - Pedestrian and bicycle access
  - Noise
  - Neighborhood/business displacement
- Identify those areas expected to require further analysis for NEPA purposes.
- Prepare an environmental scan report for ITD and public review.

Expected Products (Results)

- An environmental scan map of key socio-economic and environmental resources;
- A list of environmental issues within the corridor, and identification of areas that require further analysis.
- A report summarizing the results of the research of land uses and other characteristics of the region performed in Task 1. The report should include:
  - Community profile, including population, growth trends, and employment trends, for use in future forecasts
  - Current land uses
  - Planned land uses
  - Historical and cultural buildings and site

Step 3 Guidelines

The goal of Step 3 is to determine current and planned land uses; and the cultural, historical, and socio-economic characteristics of the corridor. Use the checklist provided below to thoroughly evaluate all aspects of the area.

Task One: Research Land Uses and Other Characteristics of the Region

Gather the following information:

- ❑ Census data and Idaho Department of Commerce population statistics;
- ❑ Population projections;
- ❑ Location of low income or minority populations;
- ❑ Employment characteristics, such as journey-to-work reports, commuting pattern studies, labor force data, and employment by industry statistics;
- ❑ Land-use assumptions from city and county comprehensive plans;
- ❑ Zoning classifications and planned developments for the corridor area;
- ❑ Pipeline and large utility locations;
- ❑ Human and neighborhood characteristics; and
- ❑ Lists of historical buildings and sites and cultural resources.

Task Two: Identify Critical Environmental Factors

Gather the following information in the corridor area:

- ❑ Applicable federal, state, and local environmental laws, regulations, and policies;
- ❑ Existing environmental studies that include geotechnical, hydrological, and soil types;
- ❑ Major geologic and general terrain features; and
- ❑ Environmental and socio-economic resources and issues.

Task Three: Conduct Environmental Scan of Corridor Area

Complete the following tasks:

- ❑ Map environmental resources, list environmental issues, and identify areas that require further analysis; and
- ❑ Prepare an environmental scan report for ITD and public review.

Step 4—Analyze Future (20-Year) Travel Demand and Performance in the Corridor

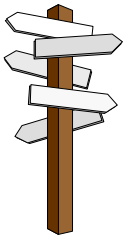
Key Activities

- *Estimate future (20-year) transportation travel demand in the corridor*
- *Identify deficiencies in performance that the existing transportation system may have in meeting the future travel demand*

Purpose (Why)

Step 4 includes estimating the 20-year travel demand on the transportation system within the corridor, and identifying the elements and geographic areas where the performance of the existing transportation system is expected to fall short of meeting that demand. In Step 6, this information will lead to listing improvements of the existing system that could meet the future travel demand.

Activity (What) and Approach (How)



Task One: Estimate Future (20-year) Transportation Travel Demand in the Corridor

To estimate travel demand in the corridor in 20 years, the simplest forecast is a straight-line projection of growth. Straight-line projection assumes the travel growth experienced over the past 20 years will continue at the same average rate over the next 20 years. If there have been regular traffic counts over a number of years in the corridor, those historical counts can be used as the basis of the projection. Straight-line projection is best suited to corridors where little change is anticipated in the spatial pattern of growth of the region.

A more complex trend analysis is needed to produce a valid forecast for corridors serving regions undergoing major growth shifts, or where historical traffic counts are unavailable or insufficient. One or more measures of growth (population increase, increase in employment, increase in number of households, etc.) that is thought to have a correlation with increases in travel should be graphed to establish whether the correlation exists and the nature of the relationship. With a relationship established, a forecast in the related measure of growth will yield a forecast in travel demand.

As a general rule do not add forecasted trips that are expected to be generated by individual businesses along the corridor. The travel forecast generally reflects cumulative demand and therefore includes trips from the developments within the area served by the corridor.

An exception to the above rule would be large-scale development located within or adjacent to the corridor, where none existed before.

The forecast may need to be "fine-tuned" by adding trip generation rates attributed to the new development.

Trip generation rates and manual traffic assignment methods for roadway systems are explained in the Institute of Transportation Engineers' *Trip Generation*.

In most cases it is counterproductive to incorporate a variety of data sources into the forecast, as it increases the potential for double counting.

Developing forecasts for travel demand for other modes (such as transit) which do not currently exist in the corridor, requires more effort, since there is no existing sample of activity on which to base a forecast. To develop those forecasts, the following may be helpful:

- Determine the size and location of the most promising market for the alternative mode. Often this includes large employers or large concentrations of employment. Based on these concentrations, is it likely a new mode of transportation will be added within the next 20 years? If yes, continue with the following assumptions.
- Assume a modest level of usage of the mode, usually in the range of 1 to 3 percent of the total travel demand. A more detailed estimate can be made by identifying the usage of similar services offered in similar communities. The American Public Transit Association publishes both ridership and cost figures. The FHWA publishes reports on the results of various alternative mode programs.
- Estimate the anticipated level of usage, as a percentage of total travel demand for discussion purposes. However, the percentage is usually low; since this percentage of use of alternate modes is so small, it is usually absorbed by the margin of error in the travel demand forecasting model.

If a forecasting model is available for the area served by the corridor, it is important to coordinate the forecasting effort to match modeling assumptions as much as possible. However, using the model to produce the forecasts for the corridor may not be useful. Models are usually developed to forecast traffic within a city or county boundary, not a corridor. Take special precautions or avoid using an existing model when:

- The model assumptions are not kept up-to-date
- The model covers only a portion of the corridor
- The corridor carries a large proportion of trips from outside the area covered by the model
- The corridor is located close to the edge of the area included in the model

Task Two: Identify Deficiencies in Performance that the Existing Transportation System May Have in Meeting Future Travel Demand

All existing modes of travel should be included in the analysis. Evaluate the existing transportation system's performance regarding its ability to meet the forecast travel demand.

Pinpoint the elements and locations where the system, if it remains unchanged, will be inadequate to accommodate forecasted travel demands. A general rating of **good**, **fair**, or **poor** may be used, as was done in Step 2.

The criteria used in analysis of the existing transportation system, conducted in Step 2, should also be used in analyzing the system's performance with the 20-year forecast.

Expected Products (Results)

- A list of the elements of expected performance of the existing transportation system, with the 20-year travel demand forecast.

For example:

- Congestion rating: Level of Service C
- Intermodal connectivity: Poor (no connections within 50 miles)
- Safety: Poor (crashes twice the state average for rural arterials)

- A table or other graphic display presenting the forecasted 20-year travel demand.
- A map of locations within the corridor where transportation system deficiencies are likely to occur with the 20-year demand.

Step 4 Guidelines

The goal of Step 4 is to estimate the 20-year travel demand on the transportation system within the corridor. Use the checklist provided below to make sure the projections are as accurate as possible with the available information.

Task One: Estimate Future (20-year) Transportation Travel Demand in the Corridor

Use models with caution and only if they correspond with the corridor boundary. Otherwise, estimate travel demand by using one of the following approaches.

- ❑ Where little change is anticipated in the area's spatial pattern and historical traffic counts exist, develop a straight-line projection in order to base the forecast on existing trends.
- ❑ For corridors undergoing major growth shifts or where historical traffic counts are insufficient, correlate the increase in travel with the projected population increase or other measure.
- ❑ Develop forecasts for travel demand on modes that do not currently exist by following subtasks outlined in Task One.

Task Two: Identify Deficiencies in Performance that the Existing Transportation System May Have in Meeting the Future Travel Demand

Include all existing modes of travel in the analysis:

- ❑ Evaluate the existing transportation system performance regarding its ability to meet the forecasted travel demand.
- ❑ Pinpoint the elements and location where the system (if unchanged) will fail to meet future demand.
- ❑ Apply a general rating of **good, fair,** or **poor**.
  See Step 2 for an explanation of these ratings.